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IDENTIFICATION OF RIGHT LEADERSHIP STYLE FOR AGILE TEAMS

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PROGRAM: ISEM, PROJECT MANAGEMENT, LEARNING TECHNOLOGIES

PROPOSAL FOR MASTER THESIS OR APPLIED PROJECT

TITLE: IDENTIFICATION OF RIGHT LEADERSHIP STYLE FOR AGILE TEAMS

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Date: April 6th 2018

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ABSTRACT

The purpose of this research is to identify trends within leadership techniques applied in agile projects that lead to project success. Certain motivation and productivity drivers need to be defined in order to understand how to evaluate key project success metrics. My research approach involved reviewing papers that studied theoretical leadership frameworks in decision-making, motivation and information sharing. The methodology applied includes creating a mock project scenario, in which two leadership styles (authoritarian vs. servant) will be tested to understand the relationship between leadership, project performance and team morale. The project will have two team leaders applying the leadership style among 4-5 members respectively. It was important to understand what were the popular notions of “effective leadership,” and how that applies to agile project settings. The results highlighted the need to be adaptive and agile leaders, by responding to different project situations, encouraging creativity and incorporating feedback from different stakeholders. Encouraging collaboration within teams through open communication channels and creating a culture of decentralization, diversity and independence is also crucial. Team and personal leadership values were shown to be interconnected. This allowed building trust and empowering the team to create innovative solutions, and the servant model of leadership offers a good set of leadership values. As a conclusion, it is important throughout projects to align leadership goals with the project goals of scope, time and cost. Future research needs to be executed for projects across industries, especially for firms transitioning from a traditional waterfall methodology towards adopting agile/scrum processes.

KEYWORDS:

Agile leadership, collaboration, servant leadership, decision-making, scrum teams, communication, adaptability, motivation theory, team morale and collective wisdom

1. INTRODUCTION

Leadership throughout the course of a project usually entails the efficiency and effectiveness of executing a project's tasks. It defines the ability to have clear vision, high team morale and practicality to avoid risks and overcome challenges. Agile teams can be defined as a group of cross-functional individuals working to achieve project goals in fixed iterations called sprints. With the growth of agile teams, it is important to develop a framework around successful leadership practices based on tested trials. With agile practitioners describing a high success rate for these projects among customers, business goals and the people who practice agile, the use of these methodologies will only become more widespread in the upcoming years.

It is important to define what appears to work well in self-managing teams. Archaic ideas of maintaining direct control and autocratic management of employees may need to compromise with a new democratic and flexible kind of leadership encouraging innovation and collaboration. Overall the concept of leadership has connotations of a higher degree of authority, motivation, responsibility and decision-making authority. Agile projects possess a high level of autonomy and empowerment. Both agile managers and other role-players need to understand what leadership responsibilities are expected from different roles. This will help set expectations during the initial phases of a sample project and prevent team conflicts during the execution phase. The negative impact of a poorly led project can be huge if the project in question is large scale, global and complex in nature.

Agile principles make it important to have mutual respect and deliver on product deliverables while going through the team phases of forming, storming, norming and performing. It's in the

forming stage that the leadership is determined, along with what the agile processes look like and overall project nature. The usual phrase associated with agile teams is that of servant leadership. This involves managing a team without direct orders but by facilitating their actions and preventing obstacles. Thus the benefits of servant leadership in practice, and how perhaps authoritarian leadership could overcome some of its shortcomings in practice will be reviewed.

The main problem my research tackles is what counts as successful leadership under an agile project. Leadership techniques apply to most agile roles and pervades through both formal and informal channels. Formal leadership is based on a person's position in a group, and informal leadership through the perception of one's peers. My research will mostly be qualitative in nature, and look at what works and what doesn't work while applying leadership techniques.

The key topics in my thesis include "Adaptive leadership strategies," which looks into the importance of dynamism and flexibility within teams. It reviews what traits help teams succeed in the input-throughput-output workflow project model. The "Encouraging Collaboration" topic then reviews the ideal decision-making structure and how to inspire motivation to create a collaborative work environment. Applying different forms of leadership agility is seen as a core concept based on the challenge ahead. Finally, the last "Servant leadership" topic defines the elements of a servant leader, and expected outcomes from this leadership model.

The upcoming problem statement chapter will include a description of the problem statement and why it should be solved along with key deliverables. The Literature review chapter summarizes my review of existing sources (journals, books etc.) related to the topic, and compares and contrasts key leadership techniques. In the proposed solution approach the research methodology

to test my thesis will be discussed. This involves randomly assigning participants into one of two project teams. One team will encounter a leader displaying authoritarian leadership while the other will follow servant leadership principles. The results section will then compare and contrast project outcomes, project progress and participant feedback across these two teams. Finally, the conclusion chapter readdresses the thesis with opposing viewpoints, and suggests further research possibilities in leadership challenges within agile teams.

2. PROBLEM STATEMENT AND JUSTIFICATION

My research question is about what leadership qualities and techniques should be employed within agile teams to optimize for attaining the project goals of time, scope and cost. It also looks into how to balance the art of encouraging creativity and independence while maintaining control over project progress. The sub-problems tackled by this study include:

- What is the impact of a leader's level of control over decision making on the team's ability to progress through project scope and team conflicts?
- How much level of collaboration/sharing of responsibilities within teams encourages solution building, without acting as a detriment towards completing project tasks?
- What leadership style promotes a social atmosphere within the team and maintains high morale without compromising on team productivity?
- Is there a level of trust/respect that teammates need to display towards the leader for the smooth running of a project? And does this change over time?

- What's the short-term versus long-term impact on relationships defined by hierarchical autocratic leaders versus delegating servant leaders?

This study will review two leadership scenarios – the authoritative versus the servant leadership model. Authoritative leadership is defined as an autocratic leader with centralized decision-making power. Teams in this model tend to operate in a strict hierarchical model with the delegation of responsibilities strictly controlled by the leader. Servant leadership on the other hand refers to a model of high information sharing and collaboration, wherein the leader aims to empower the team with decision-making powers, creative authority and task responsibilities.

Other leadership styles used in project environments are not studied in my thesis. However, this experiment can be expanded to include teams working under further leadership styles, to understand their cause-effect on project outcomes.

My hypothesis is that operating under servant leaders encourages a working environment not only with a high level of team morale and socialization but also pushes the team towards achieved the project's time, scope and cost goals, with a mutual sense of trust and respect between the leader and other team members over the short and long term. Long term in this case would be defined as over the entire course of the project, and possibly future projects.

Despite the need to adapt to flexible roles in agile projects and the methodology's prevalence across multiple industries one would expect an overall increase in organizational morale with increased implementations of agile teams. However according to the 2016 Scrum Alliance report survey, "71% of agile/scrum teams" (Alliance) believes in increased tensions within organizations, primarily due to shifts required in organizational culture and a higher degree of uncertainty with process change. This problem has negatively affected how project leaders and

leadership personnel adopt the guiding principles that define self-organizing teams while maintaining control over project management standards. Possible causes of this problem are changing team compositions, improper expectations placed on team roles and evaluation of employee performance. Otherwise, there could be sustained levels of employee turnover and inefficient allocation of resources for hiring and training. With the increased successes of the technology sector, it is important to define leadership priorities and acknowledge a list of agile challenges, before applying creative management to customize tactics and strategies based on the firm. Perhaps research that investigates successful leadership practices within firms transitioning into an agile model could remedy this situation.

3. LITERATURE REVIEW -- ANALYSIS OF RELATED WORK

This literature review compares research aimed at improving leadership during project planning and execution phases. Twenty-five papers were studied to understand what determines leadership success within projects. What are the strengths of agile leaders in making teams achieve individual and team goals? Some key topics of research include applying decision-making structures, methods to encourage information sharing and agility to adapt to different situations. These challenges haven't been solved yet due to the rising adoption of agile methodologies, and little research tackling qualitative subjects such as motivation levels, leadership theories etc.

Topic 1: Adaptive leadership techniques

To determine effective project-style leadership techniques, it is important to understand what are the usual motivations within a project team. Brede Moe and Dingsor would define standard project goals/motivations to be "increased productivity, innovation and employee satisfaction."

(Moe Brede and Torgeir Dingsoyr) However what make the agile method unique is that “the team itself decides how the work is coordinated.” (Abrahamsson, Frank Maurer and Marchesi) His description of leadership in this team-oriented environment involves an effective monitoring process with constant feedback and reinforced learning loops backed by effective communication channels. This allows for a good degree of shared leadership across roles and avoids redundancy of failed behaviors. The learning loop provides adaptability and dynamism among teams to respond to changing variables, without strictly adhering to operating rules. Informal channels of leadership are thus allowed to thrive in this setup.

Moe and Dingsor also employ the Dickinson and McIntyre teamwork model, which follows an input-throughput-output scenario. Leadership here is only seen as an auxiliary input driving team performance. An ideal decision structure would thus neither be a centralized one with one entity making all the decisions nor one with all team members making all decisions. Team members would be encouraged to share their decision-making authority throughout project processes. As illustrated in Figure 1, communication occurs throughout the process but monitoring and feedback should be re-inforced into the learning loop.

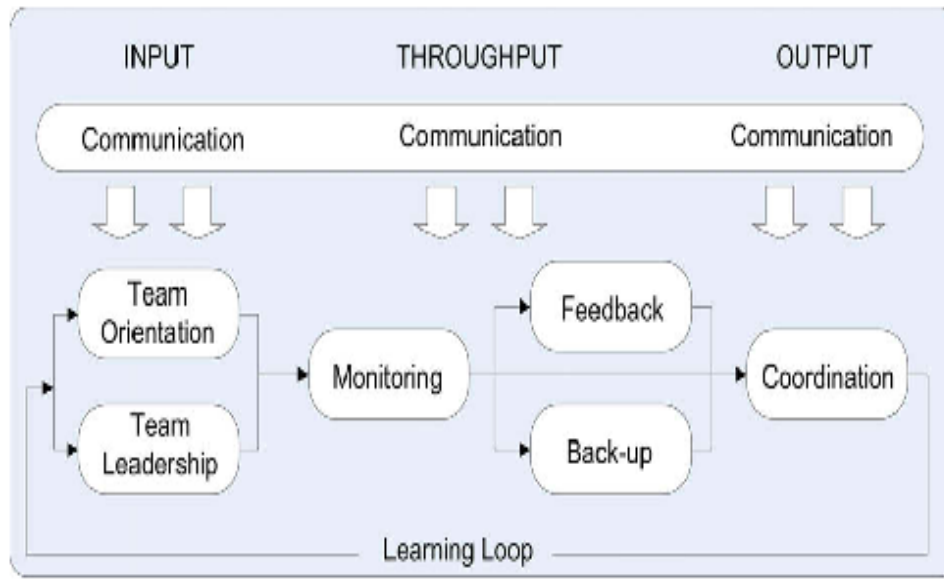


Figure 1: Dickinson and McIntyre Teamwork Model (Moe Brede and Torgeir Dingsoyr)

Due to this shared responsibility, it is important to have motivated individuals in the project. Patti Mandarino in her article “Leadership in an agile environment” further discusses the importance of building upon this trust to establish a collaborative problem-solving mentality within a team. She suggests the “incorporation of informal social events, team building events, health checks and detailed retrospectives, especially in the early phases of team maturity” (Mandarino). Knowing team members as people and determining skills, capabilities, backgrounds etcetera will go a long way in productively exploiting diversity of opinion and understanding the ideal resource allocation per task.

Topic 2: Encouraging collaboration

Agile teams rely more on the concept of “collective wisdom” rather than individual expertise. In the book “The Wisdom of Crowds,” James Surowiecki mentions the importance of collective wisdom, that under specific conditions of high independence, opinion diversity and

decentralization, “a group will most times make a better decision than one expert.” (Surowiecki)

It is important for a good agile leader to accommodate these conditions. Some ways of doing so include making different stakeholders to independently note down retrospective items and having frequent cross-project review sessions to promote information sharing. As an agile leader, understanding team leaders also allows for time saved in not requiring consensus for each decision and in avoiding micro-management of each task.

In “Mastering Self-Leadership,” Manz and Neck highlights, “in order to be effective leaders of others, it is first important to lead ourselves effectively.” (Manz and Neck) The word “agile” in agile teams demand for agility. The need to be organizationally able to overcome changes in external environment means a high-deal of leadership agility within teams. He defines this through “context-setting agility, self-leadership agility, stakeholder agility and creative agility” (Stone and Robert Russell).

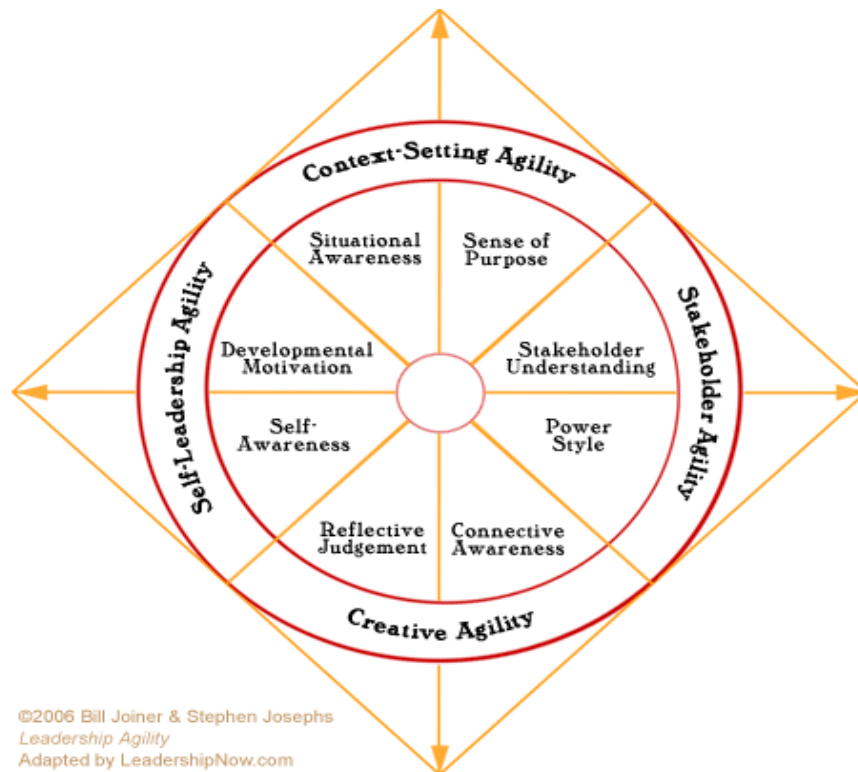


Figure 2: Manz and Neck's Leadership Agility Model (Manz and Neck)

In Figure 2, we see four agility competencies that allow ensuring flexibility across different group sizes, creativity levels, project situations and degrees of self-leadership. Each of these competencies involves defining the scope of dynamism within learning teams to act on feedback and deploy reinforced actions. To enable this, managers should incorporate reflective action in developing objectives, preparing an objective achievement plan, deploying action and reflecting on completed steps. Bill Joiner in “Developing agile leaders,” thus concludes that “managers should be trained through workshops and seminars regarding a “sustained personal commitment to self leadership, the practice of using everyday initiatives to become a more effective leader”⁵

Topic 3: Servant leadership

Most of these above mentioned qualities fit within the servant leadership model, first coined by Robert K. Greenleaf. It derives from the core attribute of leaders primarily focused on serving others' needs. The goal is to empower others to accomplish organizational objectives. James Laub and Farling performed extensive research to define specific servant leadership characteristics. They determined "a strong alignment between personal and leadership values for those acting as servant leaders. What makes a servant leader unique is the amount of vision, trust, respect and risk-sharing willingness to shift the primary focus of his/her leadership from the organization to the follower."

High-tech projects involve team members with specific levels of expertise to execute certain roles. Thus expectations from leaders in these projects tend to be more about overall direction than about how to perform individual tasks. This enables for a leadership style that delegates authority but doesn't sacrifice the need to review high-level milestones and tasks.

There are many reasons for the ideal leadership style within agile projects not being finalized. One is the growth stage of the agile framework in general. As more industries apart from the high-tech sector adopt these techniques there will be more research focused on this. Also how to define success in these projects need to be well defined – an ideal approach can be developed by reviewing the project's progress towards time, scope and cost goals to understand if the leadership styles are working. In my research I plan to use the lens of other team members (developers, testers, SMEs etc.,) primarily to compare motivational and satisfaction levels within the team. Since team productivity is key in achieving the above project goals, it is important to view how different roles respond in innovation, opinion sharing, collaboration, problem-solving etc. Main gap for future research includes seeing how projects are executed across different

industries and seeing how firms transition in culture from waterfall to agile projects. (Joiner and Josephs).

4. METHODOLOGY/DESIGN

My study design involves looking into 2 project teams. One team will be led by an authoritarian leader who acts as a task manager and tolerates minimal team independence, with little trust of his/her subordinates. The second team will have an agile servant leader that promotes an environment of trust, creativity and collaboration. Both teams will be given a 2-month sample project with the same project goals, expectations and challenges. A certain level of complexity will be employed to encourage problem solving during different phases of the project. Main results to be expected involve higher team motivation and morale in the group that employs a servant leadership model. This team is also expected to accomplish the project goals of scope, time and cost better. The success metrics that will be used to analyze the project's progress at different phases include:

Project goals: Meeting budget, scope and time constraints

Morale and Motivation levels – Participant satisfaction, level of mutual trust and collaboration

Conflict resolution – Respect towards leader and other participants, time taken to resolve conflicts

Detailed interviews and surveys will be used to collect data from members of both teams playing different roles. These will occur on a bi-weekly basis for the duration of the project, and will be

used to determine what's working and what's not working within the teams, and any areas of improvement. Trained interviewers will be required for both 1-1 settings and group sessions to facilitate a discussion and probe into certain topics. The surveys should involve quantitative scales to help compare motivation, information sharing, expectations to complete tasks, level of trust, respect towards project leaders etc. They should also include sections for detailed descriptions of specific instances regarding conflicts and decision-making structures in place. Having a casual observer throughout the process for both sets of teams would help capture day-to-day changes and transformation of team members performing their tasks during the course of the project. Some questions used in the survey include:

- What was your first impression about the leadership style adopted by the project leader?
- Do you think other project members in your team reacted the same way initially? Why?
- Describe a conflict you encountered as a team? How did the leader handle the problem and do you agree with it?
- What would be your rating of the leader's performance be on a scale of 1 – 10?

For the validity and quality of results to be assured, both teams will operate independently and not know how the other team is performing similar tasks or what leadership methodology is being pursued. Team members will be assigned randomly to either the control or treatment set to avoid any form of selection bias. Results will be tracked using the PowerBI software to understand expected progress versus actual progress in real-time. Data inputs regarding performance and individual feedback will be uploaded into this program to create visualizations and perform data analysis.

The overall steps include identifying participants for the experiment, assigning them to either the random or treatment groups, providing the designated leaders with specific instructions on how to play the leader type, monitoring the progress of the project teams, collecting and validating data, and forming conclusions. In participant identification, an invite will be sent out to potential participants and responses will be collected. Participants will be sent an email about the group they belong to, and the date of the expected first team meeting. Team leaders will be notified via email with supplement information about expectations from their leadership role. They will also be given detailed information about the project and their team members. Separate meetings will be setup with individual team members to collect feedback. This data will be stored and analyzed separately during critical project junctures until the designated last date by which all projects should be completed.

The designated leaders should be blind towards the progress and feedback of the other team, to avoid discrepancies. Further, to ensure that all teams are provided with similar resources, all participants will be expected to have a certain level of experience in similar projects and the project in itself will be based on solution building for a challenge in the high-tech industry. For result quality the feedback obtained needs to be reviewed with the participants to avoid wrong data inputs. Teams will be operating in a similar physical environment to avoid external influences and will be expected to provide the same deliverables (project plan, resource plan, role hierarchy, roadmap etc.) All of these outputs will be confidential information until after the data analysis has been performed at the end of the study.

Some ethical considerations during the research include respecting the dignity of all participants, and maintaining their anonymity. No misleading information will be provided regarding the data findings and respondent participation will only be on a voluntary basis throughout the research.

Data analyzed will be regarding leadership scores as the project moves along, team morale scores, respect towards leader scores, project task metrics, conflict handling scores. Artifacts built will be a scatter plot diagram for these metrics and a timeline progression of changing scores. Detailed qualitative answers will be stored in an excel spreadsheet, and a word cloud will be created to view the most commonly used key words.

THESIS RESULTS

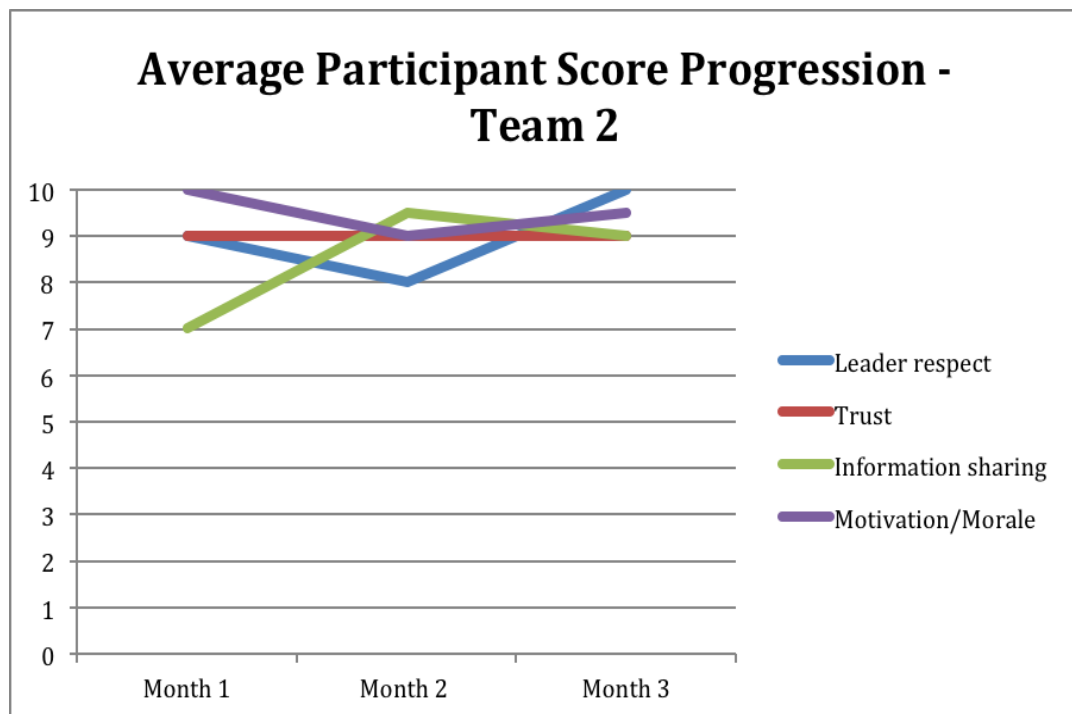
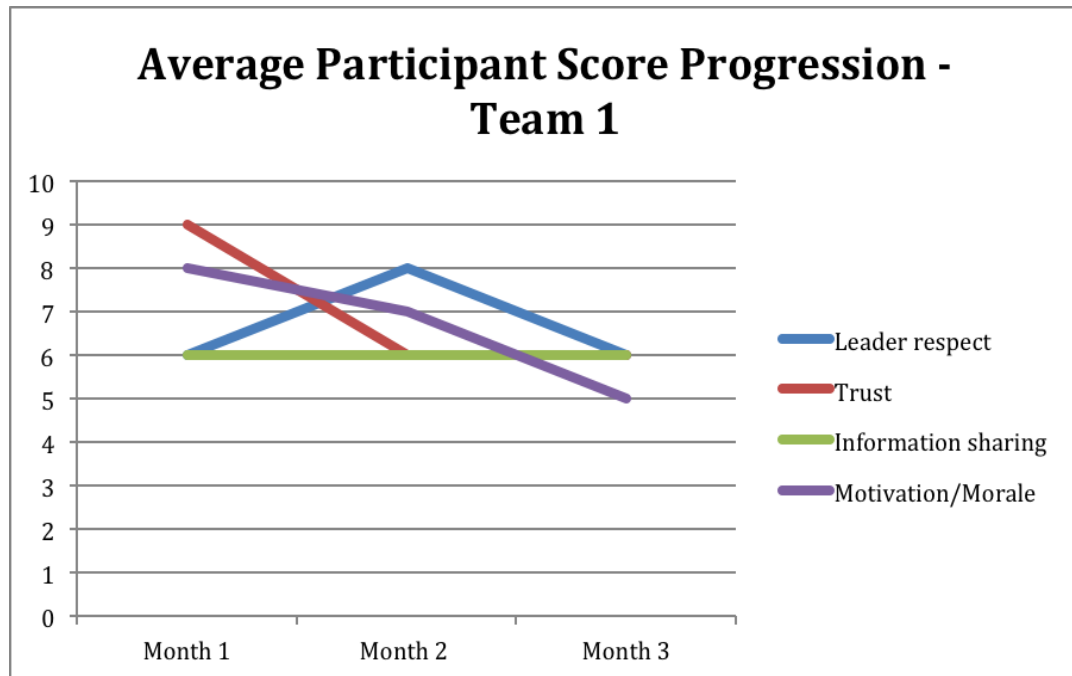
Authoritarian leadership team (Team 1)

Number of team members	5
Average respect towards leader (1-10)	6.5
Level of trust among participants (1-10)	7
Level of information sharing and collaboration (1-10)	6
Level of perceived team motivation/morale	6.5
% of participants willing to work with same team	60%
Achieved project goals	Yes

Servant leadership team (Team 2)

Number of team members	5
Average respect towards leader (1-10)	9
Level of trust among participants (1-10)	9
Level of information sharing and collaboration (1-10)	8.5
Level of perceived team motivation/morale	9.5
% of participants willing to work with same team	100%
Achieved project goals	Yes

The scores across all metrics are higher for Team 2 (Servant leadership team).



The scores across all metrics seem to be higher across time. Team 2's scores seem to be upward trending while Team 1's scores have a downward slope as each metric approaches Month 3.

Interview Word Cloud – Team 1



Interview Word Cloud – Team 2



According to the word clouds generated above the most common words for Team 1 are non-social, controlling and boring. The most common words for Team 2 include Fun, Team and

Creative.

DISCUSSION OF RESULTS

The project simulation led to teams adopting differing strategies and team cultures to achieve their project goals. Teams with authoritarian project leadership were quick to designate roles and responsibilities within the team and immediately completed the initial decisions required to get the project tasks going. They displayed medium to high morale in the beginning, and according to surveys believed that the trust and collaboration among teammates would improve as the project progressed. As certain obstacles arose in the project during the halfway mark, a few participants felt powerless about not being able to make judgment calls based on past experience. This discontentment was not explicitly discussed with the project leader. Also while the tasks requiring individual effort were completed efficiently, tasks that were interdependent and required information sharing were performed slowly primarily due to communication gaps and redundant efforts. The overall respect level for the project leader was between the survey score range of 5-7. While the initial impression of the leader was one of awe and respect among the participants, this tended to waver as the project continued. Further, any internal conflicts were mostly dealt with avoidance strategies, leading to most participants working in siloes. Very rarely were any of the leaders' ideas challenges or any new ideas by the participant brought up for discussion. The initial enthusiasm for participating in an initiative with new teammates eventually died down, and the team progressed through their daily tasks in a monotonous manner with limited social interactions. Participants described other team mates as having low performance expectations from each other. From the PowerBI software, we noted that the most challenging, complex phase of the project took longer to complete than the teams with collaborative agile leaders. However, simple tasks were conducted

at a relatively fast pace with very few checks in place usually to perform any review. A roadmap of what the project looked like was created in the first week, and very little input was recorded from the participants. They described a feeling of disengagement from not being able to share inputs about the roadmap and infuse a degree of creativity. Overall on a scale of 1-10 according to the submitted surveys, the team averaged around a 6.5 for motivation level, 5 for information sharing, and 7 for trust level. At the end the project outcomes were met 10 days ahead of schedule and within the estimated budget.

The team employing collaborative, servant leadership was slow to begin activities related to project tasks. The first week was spent discussing team guidelines, encouraging team socialization and democratically deciding on project priorities and overall roadmap.

Responsibilities weren't elaborately defined, but the teams understood who would be better at handling different tasks. They trusted teammates better (9 for trust level), mainly as a result of being aware of people's backgrounds, experiences, skills and knowledge gaps as a result of social discussions. The team was conversational about their progress and frequently provided status updates, while maintaining a social, cordial atmosphere. Participants also felt responsible for helping each other succeed, and conflicts occurred frequently to challenge ideas. This high level of project engagement created a sense of responsibility for participants to ensure project success, especially during the challenging phase. This phase involving high complexity, encouraged the team to brainstorm, test out different strategies, and share information frequently to arrive at an optimal solution. A high level of expectation was placed on fellow participants to complete their respective tasks, and while the initial level of respect towards the leader was ~7, as the project progressed it moved towards a 9. They also thought there was a fair amount of shared leadership involved, leading to an environment of mutual respect between the

project leader and other roles. Very few moments required the need to work in siloes, and team members were empowered to report delays in tasks and request for help on activities. This especially prevented delays during tasks described as high-challenge. The team also requested more 1-1 meetings with the project leader to discuss any team/task issues allowing the right level of escalations. The project was completed 10 days ahead of schedule and below the estimated budget as well.

Other key insights from post-project analysis reported:

- All participants from the servant leadership team reported that they would love to work with the same team on another project, while only 60% of the authoritative leadership team reported the same.
- The participants from the servant leadership team were more willing to discuss their project experiences and share their thoughts/feelings while answering the interviewers' prompts. The authoritative leadership team was more guarded with their responses and required further prodding to provide replies longer than 1-2 sentences.
- The servant leadership team had differing answers to the most valuable team member, while the authoritative leadership team all concluded that the project leader was the most vital member.

Overall while the project goals of time, scope and cost didn't display varying differences across the leadership models, it appears that there were significant differences in levels of mutual trust, socialization, conflict resolution and development of leadership qualities. These differences may also impact project goals further for a longer duration project or if the same teams were brought together for another project; however, this would only be scope for future research.

CONCLUSIONS

The choice between authoritarian leaders and agile servant leaders shape project outcomes, level of trust and collaboration of the members involved and how conflicts are resolved. Authoritarian leadership probably works in settings with teams having less input to share and where immediate decision-making is necessary. This is especially true of relatively simple projects. However, a model of agile leadership with delegating responsibilities and high rate of information sharing helps with encouraging team morale, creative participation and task flexibility. This helps with projects tackling a moderately high degree of uncertainty especially. Servant leadership seems to encourage constant application of the learning loops in which communication is emphasized from input-output and there's iterative feedback on constant improvements in the process.

For the implemented study the mock project ran over a period of 3 months. The critical phases included:

Month 1 – Identifying and assigning participants, providing project overview, initial round of interviews and surveys (1 – 2 weeks)

Month 2 – Mid-term checkpoint of project progress, further interviews and surveys (2 – 6 weeks)

Month 3 – Assessment of project outcomes, gathering summary statements and consolidating participant input/survey scores (3 – 4 weeks)

It would be interesting to try out a similar experiment with different kinds of projects. Projects differing in skill levels, timeline, level of complexity and task interdependence could affect how teams respond and what team cultures tend to prevail. This could be performed in a manner

where there is no clear leadership style defined, to see what sort of leadership consensus does the team adopt to suit its needs. Some questions that could be looked into further are:

- Are there aspects of agile, servant leadership that fail to accommodate interests of all roles?
- What's the ideal relationship between the project sponsors/executive team and agile teams? What's the ideal level of monitoring, communication and project control to encourage optimization of outcomes?
- Is there a hybrid version of authoritarian and agile servant leadership that would be optimal in certain projects? What are the criteria for these projects?

The goals provided could also be vague to see how goals are defined based on team dynamics. Overall, project leadership appears to play a crucial role in all aspects of project planning, execution and final outputs.

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